REVIEWS.

ART. XVII.—*Notes and Observations on the Ionian Islands and Malta: With some remarks on Constantinople and Turkey, and on the System of Quarantine as at present conducted.* BY JOHN DAVY, M.D., F. R. SS. L. & E. Inspector-General of Army Hospitals, L. R. London: 2 vols. 8vo., pp. 936.

IT is well remarked by Dr. Davy, that amongst the advantages enjoyed by the medical officers of the army, "the opportunity which the service affords of visiting distant countries may justly be ranked as one of the most considerable, combining the pleasure and profit of travel with professional duties and culture, so that individuals, if intent on self-improvement, may derive at the same time a double benefit." That this advantage has been turned to good account by our author, is sufficiently obvious in the two volumes before us, not to speak of his other labours, in all of which we discover that philosophic acumen which distinguished his illustrious brother, Sir Humphry. But it too often happens that medical officers, employed in the extensive British colonies,—a remark equally applicable to our own, serving upon an almost endless frontier,—feel themselves under no obligation to contribute, according to their peculiar advantages and abilities, to the general stock of knowledge.

> "If medical officers," says Dr. Davy, "considered it a duty which they owe to the public to communicate such information, as they may have it in their power to collect, relative to the countries in which they have been stationed, how many doubtful points would have been cleared up,—how many errors corrected,—how much more perfect would the histories of those countries have been rendered."

Influenced by views of this kind, our author was induced to embody the notes and observations made during a period of eleven years, (from 1824 to 1835,) that he was employed on the medical staff of the army in the Mediterranean. Besides, he has since been sent by Her Majesty's Government to Constantinople, for the purpose of aiding in the formation of a medical department for the Turkish army, and in the organization of their military hospitals.

As we design in this review to confine our remarks to such parts of the work as pertain strictly to medical science, the portion to be brought under notice is comparatively limited. The first volume, notwithstanding its high interest to the general reader, we are consequently obliged to pass by with scarce a comment. It treats of the history, geology, mineralogy, climate, soil, agriculture, horticulture, etc. both of the Ionian Islands and of Malta, and also of the temperature of the Mediterranean sea, and of the specific gravity of its waters.

As the topography of a country, in a medical point of view, is, however, of indispensable importance, we will here present, in the words of Dr. Davy, a description of the general features of Malta and the Ionian islands, which might be expected, on account of their proximity in the same sea, to exhibit a very similar physical character.

> "Although their solid geological structure and the incumbent soils are very analogous, yet the aspects presented in their scenery are very different as are also their productions. The Ionian Islands generally, are distinguished for beauty of landscape, for luxuriancy of vegetation. Malta is remarkable for apparent nakedness of surface, and an almost total absence of those features which constitute beauty. Where cultivation is neglected in the one,—the myrtle, the arbutus, the ilex, the cypress, commonly spring up, especially where most conspicuous, in the low grounds near the shore; whilst, in the other, similarly circumstanced, in the place of such a rich and beautiful shrubbery, will be found only low plants, such as can exist in a shallow soil capable of bearing long continued drought, amongst which the thistle may be mentioned as most conspicuous. Nor are the products of cultivation, (confining the attention to the more prominent, and, as it were, the staples,) less strongly marked: these in Malta are chiefly annual crops, principally of grain and cotton; whilst in the Ionian Islands, they are principally the olive and the vine,—one perdurable, the other of great durability."—*Vol.* 1, p. 18.

We cannot, however, refrain from here introducing a concise account of the Sirocco, concerning which very contradictory descriptions are to be found in authors. This wind, which has always been a subject of much interest to the medical philosopher, has been described by some as excessively damp, and by others as extremely dry. There are not wanting even descriptions representing it as both damp and dry, or that it possesses no peculiar qualities. This discordancy is attributable, no doubt, to partial and superficial observation, inferences having been drawn from exceptions in particular locations; but to the widely extended observations made by Dr. Davy, this objection of hasty generalization finds no application.

> "The Sirocco wind," he says, "in Malta, and it may be added, in the Mediterranean generally, as well as in the Ionian Islands, is invariably charged with moisture, and even more so in summer than in winter. When it blows with any strength, the difference between a moist thermometer and a dry one exposed to it, seldom exceeds 4° or 5°." [We may here add, by way of contrast, that the south-west winds, in summer, have often an extraordinarily low dew-point. "I have witnessed with these winds," says Dr. D., "a temperature so high as 105°, and a degree of dryness so great that a moist thermometer exposed to the wind, fell from 105° to 73°, and on another occasion, from 101° to 69°,—a difference of 32°."] "Its temperature is never very high, even in the height of the hot season. I have never seen it raise the thermometer above 86°. The atmosphere, when this wind prevails, is always hazy, as if palpable vapour were suspended in it. Dust is raised by it in a remarkable manner, and carried along with it.* The sensations which it produces at different seasons are far from being the same. In winter, when its temperature may be about 60°, it feels mild and agreeable. In spring and early summer, when its temperature may be about 70°, it is not generally unpleasant. It is chiefly in summer and autumn that it is disagreeably felt and complained of, when its temperature ranges between 75° and 85°. The higher its temperature, so much the more distressing are its effects, owing to the little evaporation which it produces. This is connected with its comparative humidity; and this, its humidity is, I believe, the principal cause of all its peculiarities,—of the oppressive sensation of heat,—of the perspiration in which the skin is bathed,—of its relaxing and debilitating effects on the body, and its lowering and dispiriting effects on the mind. Other effects, too, which are unquestionable, may be referred to the same quality,—as its retarding the drying of paint,†—the promoting the decomposition of animal and vegetable

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* "Perhaps in consequence of the specific gravity of the dust being diminished by the absorption of moisture."

† "Its bad effects, in connection with the operation of house-painting, appear to be

matter,—the rusting of metals,—the fermentation of wines, and the acetous fermentation,—to which may be added the propagation of odours."—P. 268.*

We are not disposed from previous knowledge to agree with our author, that the effects produced on the animal system by the Sirocco, are attributable to moist air alone. But more of this anon. Some of the effects ascribed to the Sirocco are believed by Dr. Davy to be imaginary; such as interfering, so as to render them inert, with the operations of vaccination and of inoculation for smallpox. This opinion, however, was adopted by Dr. Hennen, who says "that wounds and ulcers, and the discharge from mucous surfaces, generally deteriorate during the prevalence of a Sirocco." Nor does Dr. Davy believe that sound wines, if bottled during a Sirocco, will not keep.

> "The beneficial effects of this wind," continues our author, "which have generally been less dwelt on, and are less commonly known, than its disagreeable ones, are dependent, I believe, chiefly on the same quality of humidity,—as its promoting vegetation, by preventing the parching of the soil,—its favouring the corn-harvest, by preventing the sudden drying of the ear, and the falling out and loss of the grain,—and its favouring the olive-crop in ripening, by preventing the olives from becoming shrivelled on the trees. In the month of May, the period of corn-harvest in Malta, a hot and parching south-west wind is as much dreaded by the natives as a cold and parching north-east wind is feared in Corfu, in February, the time of the olive-crop. A good word, too, is sometimes spoken of this wind by sportsmen, on account of the flights of quail which it brings in; and occasionally, also, by invalids, such as happen to like a warm moist atmosphere and muzzy weather; and occasionally, too, by young ladies, performers on the guitar, the sounds of which it softens and improves, by its relaxing effects on the chords. It is, perhaps, partly on this account as well as on account of the warmth of the Sirocco, that it is peculiarly influential in the Ionian Islands on the musical natives; when it blows, especially in winter and spring, serenading parties perambulate the streets, and the guitar, in accompaniment with the voice, is to be heard very commonly. Besides humidity, other causes have been supposed to exist, in connection with the Sirocco, to which its peculiarities have been attributed. Some have considered them owing to a peculiar electric state, and some to deficiency of oxygen. The experiments which I have made on it with much care, have not been favourable to either of these conclusions."—P. 271.
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> From a series of experiments performed by Dr. Davy at Valetta, in 1835, relative to atmosperic electricity, "no well marked difference was perceptible in the electrical condition of the atmosphere, from whatever quarter the wind blew, under ordinary circumstances,—whether the clear north-east or north-west wind prevailed, or the hazy Sirocco, the electrical state of the atmosphere was found to be opposite to that of the earth,—the former negative, the latter positive."—P. 272.

In another series of experiments, our author showed that there is no appreciable difference of specific gravity between the air of the moist

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of two kinds—retarding the drying, and preventing the due adhering of the paint. The former may be from the little evaporation going on; the latter, from the humidity of the surface to which the paint is applied, and to the incorporation probably of moisture with the substance of the paint."

* "Dr. Hennen, in his Medical Topography of the Mediterranean, in p. 32, noticing a similar effect of the easterly winds at Gibraltar, in connection with the sewers, which, with easterly winds, are peculiarly offensive, asks: 'Is this the result of the humid atmosphere softening the soil of the sewers, and occasioning an increased exhalation?' As moisture appears to be almost essential to the propagation or dispersion of odours, probably the effect in question is chiefly owing to the increased power of the air, as a carrier of odorous particles, in consequence of increase of humidity."

Sirocco or any other wind; and as regards the different seasons the same negative result appeared.

> "The necessary deduction from these negative results," he says, "is, that the ponderable elements of the Sirocco are nowise different from common atmospheric air, and *à fortiori*, that the proportion of oxygen is not less."—P. 273.

Dr. Davy does not believe that the Sirocco is impregnated with any subtile substance analogous to malaria, or any other having a specific effect injurious to the constitution. He thinks "that all the ordinary effects of the Sirocco may be referred to its humidity and comparatively high temperature combined." Did Dr. Davy's experiments on the electrical condition of the atmosphere not stare us in the face, we should say that he is in error in ascribing no influence to the low electric condition of this wind; for as it is in the negative state, and as we had supposed relatively low, we had always inferred that the animal frame is, by this means, robbed of its positive electricity, thus depressing the powers of life.

It is still a disputed point whether the Sirocco comes from Africa, or is air set in motion over the Mediterranean. We do not agree with our author that "the circumstance that this wind does not prevail in Africa, on the countries bordering on the Mediterranean, is in favour of the latter supposition;" for even a hot and dry current from the arid sands of Africa, in crossing the Mediterranean, may acquire a very high dew-point.

We have now reached the second volume, which is more rich in subjects purely medical, such as malaria, pulmonary consumption, smallpox, and observations on climate and quarantine.

The foundling hospitals in Corfu and Zante, it would seem, have been rather positive evils than useful institutions.

> "All the infants brought and deposited in the revolving box for their reception," says Dr. D., "were taken in without inquiry. They were said to be of three classes: illegitimate offspring of clandestine amours, whose mothers were intent on hiding their disgrace; the offspring of women of the town, careless of their children, and considering them a burden; and thirdly, those of poor married women, who from their poverty had difficulty in rearing them, and who hoped, by collusion, to have them sent them to nurse. The mortality amongst these infants, forsaken by their parents, was appalling: in a paper before me, on the subject, it is stated that the deaths which took place amongst them in five years, ending the 1st May, 1835, amounted to seventy-five per cent. of those received; and that from the 31st of May 1835, to the 31st of October 1837, the number of deaths had been fifty, namely, twenty male infants and thirty females.* The writer of the paper in question, pointing out the bad effects of the old system, in relation to the cloak that it afforded to licentiousness and the deadening of moral principle and natural affection, and urging reform, powerfully combats the argument, that an alteration might lead to child-murder, by the remark, of the almost impossibility of the crime ever being so destructive of human life as the existing remedy."—P. 119.

The next subjects that come under notice are malaria and the fevers of the Ionian Islands and of Malta. Our author's conclusions are based chiefly on the British army statistics, which were fully reviewed in the number of this Journal for April 1841. Were it not for fevers of malarial origin, these islands would possess a degree of salubrity superior even to that of England and to most parts of Europe.

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* "In Malta, the mortality in the foundling hospital, for many years, was as great, I believe, as in the Ionian Islands, so long as goats' milk was given to the infants. Before I left the island, a reform was attempted, nurses were provided, but not liberally, one nurse occasionally having had to suckle two children. Establishments of this kind seem to be doomed to mismanagement and abuse, as if labouring under a curse, and who shall say not merited, as in their general tendency likely to do much more evil than good."

> "The remittent fever of the Ionian Islands," says Dr. D., "appears to be of the same kind as the endemic remittent fever of the East and West Indies, of the tropics generally, and of the south of Europe, including the yellow fever of warm climates, which seems to be merely a variety of it."—P. 236.

It is scarcely necessary to refer to the fact that with us the profession generally do not, as regards yellow fever, coincide in this opinion. The mass of the profession look upon it as a disease *sui generis*,—as solely and essentially of endemic origin,—and as never contagious under ordinary circumstances of cleanliness and ventilation.

What is malaria? This is a question which has been often asked; and that it is still involved in impenetrable obscurity, is obvious from the circumstance that but few agree in any definition. Is it light carburetted hydrogen? is it sulphuretted hydrogen? is it simply aqueous vapour and a high temperature combined? is it merely the effects of vicissitudes of temperature upon the human frame? It seems easy to establish the negative of any one, or all of these positions; but to say what it is,—*hoc opus, hic labor est!* We seem to be, in fact, entirely ignorant, both of the nature of this agent and of its causes. In relation to its causes or sources, confining the attention to the Ionian Islands, our author arrives at the following *negative* conclusions:

> "1st. That they are independent of luxuriant vegetation, which is proved by the instances of Meganisi, Cerigo, &c.
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> "2dly. That they are independent of the decomposition of vegetable matter, which is proved by the same islands, and by Paxo.
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> "3dly. That they are not constituted by the sun's rays acting on a moist surface nor on under-ground moisture, the power of the sun being much the same every year; the under-ground moisture being, in all the islands mentioned, very scanty, and, there is reason to believe, very little subject to variation of quantity from year to year; and farther, there being no constant relation between hot summers and rainy winters and malaria; or *vice versa*, which is a well established fact.
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> "*Lastly.* That they are independent of the mixing of fresh and salt water, and of the alternate inundation and exposure to the sun and air of muddy surfaces, there being hardly any appreciable tides in the Mediterranean, and the shores of the Ionian Islands being remarkably clean and free from mud."—P. 249.

These conclusions do not coincide with those drawn from the phenomena witnessed in our own country. As this subject has been quite fully investigated on the broad basis of the facts furnished by the medical statistics of the United States Army, we will here present the general conclusions which seem to be fairly warranted by these data. That heat is essentially connected with the production of malaria, is manifest from the fact, proved statistically, that in proportion as the equatorial regions are approached, do febrile endemics become more rife and malignant,—a remark which applies equally to the relative influence of the seasons as regards their temperature. But heat alone is not an adequate cause; for, in our southern regions, whilst the margins of streams, lakes, and marshes, are rife with malarial diseases, the adjacent sandy pine woods possess an exemption. Moreover, this connection between organic remains and what are termed malarial diseases, is further negatively established by the fact that, in surveying the topography of the United States, it is found that a like exemption pertains, even in regions decidedly malarial, to the military posts which have a dry and sandy soil. Thus, in the malarious region of the great lakes, the posts having a dry and sandy soil, as forts Brady and Mackinac, are almost exempt from these diseases; and so upon the Atlantic Plain, Forts Monroe and Moultrie, each situated on a sandy tongue of the sea-coast, have a similar exemption. The same law, viz. that heat alone is not sufficient for the production of malaria, is well illustrated in the fact that the malarial diseases of the Nile never extend into the neighbouring desert. That moisture is also an essential ingredient among the combined causes productive of malaria, seems evident from the general fact that all those cities and military stations, which have proved, in every quarter of the world, the graves of unnumbered thousands, have occupied the banks or deltas of rivers in low flat countries. These two agents, heat and moisture, notwithstanding essential, are not, however, in themselves adequate causes; for vessels at a small distance from the land, in the rainy season of the hottest climate, will, if proper police regulations are maintained, continue healthy. It would seem then that heat and moisture, however essential, require the co-operation of other agents; and what these conditions are, at least so far as our own country is concerned, would seem to be plainly indicated in the remarks just made, viz. *a soil abounding in organic remains.*

We have now reached the portion of these interesting volumes, which treats of the climate of the Mediterranean in relation to pulmonary consumption. This is an inquiry of the highest importance, more especially as the researches of recent years tend to subvert long established opinions. We refer to the results afforded by the British army statistics, which warranted the opinion that it is worse than useless to visit southern regions in pulmonary diseases. Upon these data it was confidently announced that it is "*by no means likely that any beneficial influence can be exerted by climate itself*" in these affections; and in this sentiment most of the British journals accorded. Thus it was observed in an article in the "Medico-Chirurgical Review," that these reports "*have given the death-blow to the expatriation of invalids affected with pulmonary alterations.* They serve also to show us the salubrity of our calumniated climate, and to lower our aspirations for that 'sweet south,' whose sunny skies and luxuriant plains too commonly smile but to betray. Statistics dispel those illusions of poesy, and even prove that consumption, the reproach of our fickle seasons, lurks as fatally in the balmy Italian zephyr, or the sultry tropical breeze."

It was in the articles by Dr. Forry, in this Journal* that these conclusions were, we believe, first combated. As the views of the author of the articles to which we refer have not been altogether fairly represented, in a cotemporary,† we may be allowed to quote here the concluding remarks of his review, of the Medical Army Statistics.

> "It is thus seen," says Dr. F., "that the conclusion of the reporter, that the class of pulmonary diseases is more prevalent and fatal in southern than northern latitudes, is the result of hasty generalization, or rather that it has arisen

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* Statistical Researches relative to the etiology of pulmonary and rheumatic diseases, illustrating the application of the laws of climate to the science of medicine; based on the records of the medical department and adjutant-general's office, by Samuel Forry, M.D., Medical Staff, U. S. A.; in the No. of this Journal for Jan. 1841.

Review of the medical statistics of the British Army by the same, in the No. of this Journal for April, 1841.

† British and Foreign Medical Review, April, 1842.

> from a classification of climates on mere latitude without reference to the phenomena of temperature induced by local causes. Although the reporter has, in some measure, set the world right in regard to a *theoretical* error, he has unfortunately, at the same time, led it into a *practical* one. His first error was assuming the climate of England as the standard of comparison—the second, comparing the *lowest* average in one command with the *highest* in another—and the third, basing his deductions on the *annual* results without reference to the relative influence of the *seasons*. We have devoted the more attention to this subject in consideration of its importance to the pulmonary invalid, and from the conviction that the evil influence of false doctrines bears a direct ratio to the character of the authority whence it emanates."

It is not a little gratifying to find that these views have since been fully sustained by such distinguished authorities as Sir James Clark and Dr. John Davy.

The first of these writers observes:

> "The undue confidence, in the powers of climate as a remedy in consumption, which has so long prevailed in this country is now in danger of giving place to the opposite and equally erroneous extreme of total distrust. This is, chiefly, in consequence of the statistical reports on the health of our troops in almost all quarters of the globe, showing that there is no immunity from this disease in any climate.***But as regards the influence of change of climate in the prevention and even cure of disease, *the information contained in these reports does not diminish our hopes of benefit from a temporary change of climate, or even from a more permanent residence when the climate suited to the individual case is selected, and all other necessary precautions adopted.****I had the satisfaction to find that Dr. Davy's views, [having examined his work in manuscript,] regarding the Mediterranean climate are in perfect accordance with my own."*

The conclusion at which Dr. Davy arrived from various statistical facts, and an ingenious train of reasoning upon the attending circumstances,—a knowledge the acquisition of which was especially favoured by his official situation in the Mediterranean,—is as follows:—

> "As the statistical facts show that pulmonary complaints are more fatal amongst our troops serving at home than in the Mediterranean; and as all the circumstances, independent of climate, so far as I am acquainted with them, affecting the question appear to be in favour of the troops serving at home, especially the cavalry, I am not only *not able to adopt the opinion referred to, that the climate of the Mediterranean is more productive of diseases of the chest than our own climate, but am obliged to fall back on the old and hitherto generally received opinion of an opposite nature.*"—P. 293.

Did space permit us to follow Dr. Davy in his details, it would be easy to show that no reliance whatever is to be placed upon the deductions of Major Tulloch, the reporter of the British army statistics, in reference to the climate of the Mediterranean relative to pulmonary diseases. This subject, however, has been already presented to our readers in pretty full detail in Dr. Forry's articles adverted to above.

We will, however, notice this highly interesting and important question somewhat more at length.

In speaking of the comparative liability of the natives of these southern regions to pulmonary complaints, especially phthisis, Major Tulloch remarks:—" Nor is the fatal influence of diseases of the lungs [in Malta] confined to the troops alone; it extends, in a corresponding degree, to the inhabitants." As deaths are reported by the Maltese medical practitioners under the different heads of consumption and phthisis pulmonalis, the former being restricted to cases of *marasmus*, the reporter of the British Army Statistics, by including all these cases under the same head, arrived at the most unwarranted results.

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* The Sanative Influence of Climate, etc. By Sir James Clark, Bart., M. D. F. R. S., Physician in Ordinary to the Queen, and to the Prince Albert.

> "From my professional knowledge of Malta and of all its medical concerns," says Dr. Davy, "I have no hesitation in saying, that in the statement I believe Major Tulloch has greatly overrated the proportion of deaths from pulmonary diseases. He has, do doubt, been misled by the term consumption: as used by the native practitioners, it was commonly employed to express marasmus, or wasting and loss of strength, without cough and other pectoral symptoms; and consequently the whole number, so returned, amounting to 2786, require to be deducted from the total, 6664, reducing it thereby to 3878, which, instead of being in the ratio of 5⅛ per 1000, is a little less than 3 per 1000, namely, 298." P. 294.

As Dr. Davy was President of the medical committee of Malta, and thus superintended the medical concerns of the island, his attention was directed to the monthly returns of mortality; and seeing the misconception to which the term "consumption," in the sense used above, was liable, he substituted in 1831, the term "marasmus." Major Tulloch, however, is not content to include under the class of diseases of the lungs, the cases of marasmus reported as consumption prior to 1831, but he also takes those *reported as marasmus* subsequently to that period.

In order to give a correct idea of the fatality of pulmonary diseases in Malta, Dr. Davy formed a table based upon the new form of reporting diseases; and the result shows the entire fallacy of Major Tulloch's deductions upon this point.

> "After giving the subject all the consideration in my power," he says, "the inference in relation to the native population appears to me unavoidable, that they suffer comparatively little from pulmonary diseases, and especially from pulmonary consumption, very much less than our troops in that island, and also than the civil population of Great Britain."—P. 300.

Now, Major Tulloch had arrived at the following erroneous conclusion:—"Here, then, we find that inflammatory affections of the lungs are nearly twice as prevalent in the Mediterranean as among the same number of troops in the United Kingdom, and that in the mild climate of Malta they are also twice as fatal."

These same objections, when urged by Dr. Forry, were met by a laboured attempt to invalidate them in a cotemporary journal,* but as the evidence of Dr. Davy settles the question, we shall not stop to point out the fallacies of the reasoning employed by the reviewer.

It may not be regarded, however, altogether irrelevant, to consider a little more fully the influence of climate on pulmonary diseases, in connection with the arguments adduced, in the Review in question, to invalidate Dr. Forry's conclusions, inasmuch as the subject is one of deep interest, and the journal alluded to one of some authority, and having some circulation in this country.

> "One of the most important and perhaps the most startling of the deductions drawn from the Statistical Reports of the British Army," says the British reviewer, "was the greater frequency of phthisis pulmonalis in the tropical regions

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* The British and Foreign Medical Review, April, 1842. Review of Dr. Forry's Statistical Researches, &c.

of the west, than in our own cold, variable, and much-abused climate, or even in the still more inclement regions of Canada. Now, on referring to the influence of climate on this disease in the United States army, as shown in Dr. Forry's abstract, results precisely similar are obtained."—P. 426.

There is perhaps no very striking difference as regards the prevalence of *tubercular* phthisis in any part of the United States. This affection of the lungs is no doubt much less under the influence of climatic causes than other forms of phthisis, as well as pleuritis, pneumonia, and catarrh. In Cowan's additions to Louis, on phthisis, it is asserted that, in England, "those who are *least* exposed to its influence, are precisely those *most* exposed to the vicissitudes of the climate." The agency of climate in the production of phthisis is no doubt secondary to the action of other causes, as, for example, occupation, food, and habits; and that the influence of this cause has been much exaggerated or much too exclusively considered, is further apparent from the fact, that the most variable climates are best adapted for the development of the various mental and bodily powers. In Laennec's work, edited by M. Andral, it is said that phthisis is much more frequent in the temperate regions of Europe, comprised between the 55th and the 45th degree of latitude, than it is further to the north; and this position is sustained by various comparisons. In Sweden, for example, the ratio of mortality caused by pulmonary phthisis is estimated at only 63 per 1000 deaths, whilst in London it is calculated to be not less than 236. Dr. Forry also maintains that, in the middle regions of the United States, characterized by great extremes in the seasons of summer and winter, pulmonary phthisis is most predominant, and that consequently a cold temperature is not essentially *per se* favourable to the development of phthisis pulmonalis, as well as pleuritis and pneumonia.

In respect to the deductions of the British army statistics relative to pulmonary diseases, Dr. Forry raised the objection that they were based upon the *annual* results without reference to the relative influence of the *seasons.* This was the true point at issue; but it was most carefully avoided by the writer in the "British and Foreign Medical Review," by whom the whole question was restricted to the annual results. Dr. Forry showed by tabular abstracts that pulmonary diseases, with the exception of catarrhal affections, presented a higher ratio in the middle division of the United States than either in the northern or southern; and the British reviewer, in order to be enabled to confirm the deduction of their own army statistics, viz., that pulmonary diseases are more prevalent in southern, than more northern regions, has altered the arrangement of Dr. Forry's tables; and by adding the middle division, which gives the highest ratios, with the southern, and then,contrasting this average with that of the northern division, he triumphantly adduces the result as confirming that of the British army statistics!

Now, no one acquainted with the general laws of climate would, for a moment, think of classing our middle States among the mild climates of southern latitudes, since the parallels in Europe which yield the olive and the orange, are with us productive of ice and snow. The Delaware, which is in the latitude of Madrid and Naples, is generally frozen over five or six weeks each winter; and even the Potomac becomes so much obstructed by ice that all communication with the District of Columbia is thus suspended for weeks.

As regards the question of the relative influence of the seasons upon pulmonary diseases, it seems due to Dr. Forry to present his views in his own language:—

> "That catarrhal diseases, for example, are much under the influence of season and climate, is proved by the following statistical results: Taking the average of the United States, the ratio of winter is two and a half times higher than that of summer, and the ratio of the class of posts in our northern regions, remote from large bodies of water, is nearly four times as high as in the peninsula of East Florida. In the former class is Fort Snelling, whose difference in the mean temperature of summer and winter is 56°.60, and in the latter is Key West with a difference of only 11°.34. Even on the same parallels, we find the most marked contrasts. Thus on the coast of New England, where the extremes of temperature are modified, the ratio of catarrhal affections is comparatively low; on the lakes, characterized by similar climatic features, the ratio is somewhat higher; whilst in the excessive climate, in the same latitude, in positions remote from the ocean or the lakes, it is more than twice as high. The connection of these facts with *chronic bronchitis* invests them with more than ordinary importance; for it is in that form of consumption which depends on chronic bronchial inflammation that we are justified in the expectation of deriving advantage from change of climate. Even admitting, with the reporter of the British statistics, that the ratio of pulmonary diseases is as high in southern, as in northern latitudes, it does not militate against the doctrine that benefit will be derived from change of climate in the way of a *winter* residence; for in northern climes, one great object of the pulmonic invalid is to avoid the abrupt transitions of the seasons from summer to winter. On the coast of New England, for instance, the ratio of catarrh per 1000 [men] is in the third quarter of the year 36 [cases], and in the fourth 85; and consequently the respiratory organs even when normal, are peculiarly susceptible, at this period, to morbid action; but if the pulmonic, at the approach of winter, seeks the climate of East Florida, he will find there, in the fourth quarter, a ratio even lower than that of the third quarter on the coast of New England."

It thus appears that in regard to the climate of the United States, the rule holds good that wherever the seasons are violently contrasted the ratio of catarrhal diseases is highest, decreasing in proportion as the difference between the mean temperature of summer and winter grows less; and that they are less dependent upon daily variations of temperature, combined with moisture, than upon its extreme range as connected with the seasons, as is proved by the fact that the sea-coast and the lakes do not give, on the same parallels, a ratio more than half as high as the dry and cold atmosphere of the opposite localities. The same laws have been established in relation to pleuritis and pneumonia, and, in some measure, to phthisis pulmonalis. "In reference to the last," says Dr. Forry, "it will suffice to say, that its ratio seems to have no direct relation with the other diseases of this class; for, although much under the influence of season and climate, yet it is still more under the control of other agents. Chronic bronchitis, it is very probable, acknowledges the general law, whilst the deviation is caused by cases of a tubercular nature.

One more example, and we have done with this vexed question. Another objection made by Dr. Forry, was that the reporter of the British Army Statistics had assumed England as the *standard of comparison*, by which to prove that the class of pulmonary diseases is more prevalent and fatal in southern than in northern latitudes. He consequently adopted a classification of climates based on mere latitude without reference to the phenomena of temperature arising from a modification of physical geography; and, in the present instance, from the circumstance that pulmonary diseases, as a class, are peculiarly dependent on climatic characteristics, the impropriety of arranging climates by the mere test of latitudes is the more apparent. It is shown above, that catarrhal diseases, even on the *same* parallels, exhibit, in the more uniform climate of the lakes and the ocean, a ratio not more than half as high as in the opposite localities; and, consequently, as the range of the thermometer is not greater in England than in Italy, and as the difference between the mean temperature of summer and winter is actually less, a classification of climates based on mere latitude in reference to pulmonary diseases becomes an actual absurdity. So great is the influence of local causes upon temperature that at Edinburgh, Scotland, the difference between the mean temperature of winter and summer is only 17°.90, whilst on the same parallel at Moscow, Russia, it is 56°.32; and in North America, on a parallel 12° farther south, we find this difference between the two seasons to be, at Fort Snelling 56°.60, and at Fort Vancouver, about 1° farther north, on the western coast of America, seventy miles from the Pacific, only 23°.67. Hence, if we find, far north, a mild insular climate, like that of England, its ratios of pulmonary diseases do not give, we maintain, a fair expression of the general laws pertaining to that latitude, as determined by observations made upon the same parallels of widely expanded continents.

Objection was made to England, as a standard of comparison, on the ground that as its climatic laws constitute an exception to the general laws of temperature belonging to those parallels, it could not possibly be a fair test of the question whether pulmonary diseases are more prevalent than in a region ten degrees farther south upon the continent of Europe, inasmuch as it has actually a milder climate than the latter situation. London, for example, has a climate, as regards the difference in the temperature of the successive seasons, as mild as that of St. Augustine, in Florida, notwithstanding the latter is 21°41′ farther south—a remark that applies equally to Italy in an intermediate latitude. But this will be best represented in a tabular form, with the addition, by way of contrast, of a northern position in America.

		Difference of the successive seasons.			
	Lat.	Of winter and spring.	Of spring and summer.	Of summer and autumn.	Of autumn and winter.
London,	51° 31′	9°.64	13°.56	11°.00	12°.22
St. Augustine,	29° 50′	9°.29	10°.80	9°.79	10°.30
Italy,	41° 54	11°.53	16°.03	11°.33	16°.70
Fort Snelling, Iowa.	44° 53′	30°.83	25°.97	25°.40	31°.40

In view of these facts, then, bearing also in mind that Fort Snelling, notwithstanding 6° 38′ farther south than London, has a difference. of the successive seasons perhaps three times greater, it follows that mere latitude, taken as the basis of climate, cannot, as regards the influence of climate on pulmonary diseases, be a correct standard. But our reviewer, in the hope of maintaining the affirmative, resorted to the sophistry of adducing, in illustration, the instance of *fevers on the west coast of Africa*, where this class of diseases causes only the same extent of mortality among the native troops as among troops in England.

Now, there is not the least analogy between the two cases of pulmonary diseases and fevers, as applicable to the general principle. The question at issue was the agency of atmospheric laws in the production of pulmonary diseases, which are considered its *chief* causes; whilst, in regard to the fevers of the west coast of Africa, these causes compared with others are very subordinate.

In fine, all Major Tulloch's "*new* and *startling*" deductions relative to pulmonary diseases must now be considered to have been reversed; and we are, in the language of Dr. Davy, "*obliged to fall back on the old and hitherto generally received opinions.*" We are wholly at a loss to perceive "*the interesting fact that, except the Ionian Islands, the liability of troops to consumption in the Mediterranean stations is even greater than in England;*" nor can we discover the "*striking contradiction to the popular idea,*" that it is "*by no means likely that any beneficial influence can be exerted by the climate itself*" in pulmonary diseases. To this it may be added that the more recent statistical reports of Major Tulloch "On the sickness, mortality and invaliding among the troops in Western Africa, St. Helena, the Cape of Good Hope, and the Mauritius," afford no evidence corroborative of the reporter's favourite opinion that pulmonary diseases increase in proportion as warmer latitudes are approached. We are told that "among 71,850 native troops serving in the Madras Presidency, the deaths by every description of disease of the lungs did not, on the average of five years, exceed *one per thousand* of the strength annually."

It now remains to notice three other subjects, viz: Dr. Davy's observations on quarantine, the smallpox of 1830–31 in Malta, and the climate of Constantinople in connection with kindred relations.

We deem it unnecessary to dwell upon the importance of the subject of quarantine, which, it is well known, exercises an influence of the most momentous character equally upon the general welfare and the interest of individuals. Its great object is ostensibly to afford protection from contagious and infectious diseases, but more especially the former; and hence its efforts, in the Mediterranean, are particularly directed against the importation of the plague, on the supposition that being purely contagious, it is propagated from one person to another in uninterrupted succession, without its ever arising *de novo*.

> "To effect this object," says Dr. Davy, "various regulations have been enacted. Sanatory codes have been framed, founded on the above mentioned conclusion of propagation by contact; and, on the other conclusion, 1st, That certain articles are capable of receiving, and retaining, and conveying the contagious matter, and that certain other articles are destitute of the power—forming the two classes of substances, the susceptible and the non-susceptible; and 2dly, That the contagion can lie hid or dormant, in the living system, only a certain time.
>
> "In carrying the system into effect, the necessity of it, for the preservation of life, having been considered absolutely necessary, the greatest rigour of forms has commonly been observed; no regard has been shown to personal liberty: no regard has been shown to property; no regard to the interests of commerce, or of international intercourse.
>
> "When a country is proclaimed in quarantine, persons arriving from that country are taken into a lazaretto, are strictly guarded, and are subject to the punishment of death, if they leave their place of confinement before the expiration of the specified period. The ships are received into a quarantine harbour, or are surrounded by guard-boats; their cargoes are landed, and the articles variously treated; the susceptible articles are unpacked, and either exposed for a certain time to the air, or are subjected to fumigation.
>
> "Such is a brief outline of the quarantine system, which, with various modi-

fications on the part of different governments, has been in activity in the Mediterranean, exclusive of the countries under Mohammedan rule, now upwards of four centuries.*

"Reflecting on the vast interest involved, especially in the commercial relations of nations, it were natural to infer that the subject, in its different branches, has been most deliberately considered, most carefully investigated by unbiassed and competent men, that nothing has been taken for granted, that facts have been diligently collected, evidence rigorously examined, and that the preceding conclusions, which constitute in principle the foundations of the quarantine system, have been proved to be true in a demonstrative manner, or as nearly so as the nature of the subject permits; and, consequently, that no serious objection can be made to the system,—that men's minds are at rest respecting it, and that all are reconciled to it, to its rigours, and to the annoyances and losses involved, from a firm conviction of its necessity.

"This is what might be expected; but how different is the reality. I believe it must be confessed that quite the reverse of all that has been supposed has taken place; that fear and panic have legislated, and not reason and judgment, and, consequently, that there has been no deliberate inquiry,—no examination of evidence,—no determination of facts,—and no establishment of principles from facts on the scientific inductive plan; and, therefore, as a further inevitable consequence, no confidence has been felt in the measures of quarantine amongst reflecting persons, and no satisfaction,—they have engendered doubts, and suspicions, and fears, —they have been viewed by many as irrational, arbitrary, and tyrannical."—P. 324.

To show that this is not an overcharged picture, Dr. Davy adduces the testimony of Dr. Bowring, whose observations were made when engaged by order of her Majesty's government, in instituting inquiries relative to the commerce of the East.

"The question," says Dr. Bowring, "is of consummate importance. The theory upon which quarantine regulations are founded, is, in its consequences, of such enormous cost, is creative of such innumerable vexations, impediments and miseries, that their infliction can only be justified or tolerated by a strong necessity,—a necessity founded on accurate observation, and sustained by undoubted and incontrovertible facts."

He proceeds—"When honoured by a mission from her Majesty's government to inquire into the present state and probable future development of our commercial relations in the East, my attention was naturally and necessarily called to those regulations which impede the free transit of merchants and merchandise, which levy enormous contributions upon commerce, which subject travellers to visitations and arrest, the most capricious and the most despotic, and which have created, in almost every state, tribunals holding unchecked and irresponsible authority over persons and property, exercising that authority in arbitrary waywardness, and allowing the sufferer no appeal against injury, no redress for wrong."

He adds—"The pecuniary cost may be estimated by millions of pounds sterling, in delays, demurrage, loss of interest, deterioration of merchandise, increased expenses, fluctuations of markets, and other calculable elements;† but the sacrifice of happiness, the weariness, the wasted time, the annoyance, the sufferings inflicted by quarantine legislation,—these admit of no calculation—they exceed all measure. Nothing but their being a security against danger the most alarming —nothing but their being undoubted protections for the public health, could warrant their infliction; and the result of my experience is not only that they are useless for the ends they profess to accomplish, but that they are absolutely pernicious; that they increase the evils against which they are designed to guard, and add to the miseries which it is their avowed object to modify or remove."—P. 327.*

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* "In 1423, a lazaretto, to prevent the introduction of plague, was established in Venice."—*Darn.* ii. 318.

† "In his speech in the House of Commons, delivered on the 15th of March last, moving for further inquiry, so much wanted on the subject of quarantine, Dr. Bowring states that he believes that the losses from quarantine in the Mediterranean alone, are not less than two or three millions sterling a year."—*Hansard's Parl. Debates.*

Dr. Davy, in consideration of the fact that the system of quarantine is deeply rooted in the fears and ignorance of the populace, and that governments have given very little attention to the subject, with a view to profit by honest inquiry, thinks that, notwithstanding the system will ultimately be either abolished or much modified, no material reform can soon be expected. He is ready, however, to contribute his mite towards the end proposed.

> "Like Dr. Bowring," he says, "I can speak from what I have myself witnessed of the evils of the present system; and, like him, I have come to the conclusion, that the system, in a sanatory point of view, is entirely a failure. This opinion has not been hastily formed. I have come to it after a ten years' residence in the Mediterranean, after many voyages backwards and forwards, and to the adjoining countries, and after having been four different times in quarantine, and constantly in the habit of considering quarantine questions."—P. 329.

It is the fundamental parts of the existing system which are here alluded to by Dr. Davy. The first great question is—

> "Is the oriental plague truly a contagious disease, incapable of arising *de novo*, capable of spreading only from individual to individual, by contact either directly of person, or through the medium of articles that have been touched by the diseased?"

The affirmative of this position, it is well known, is the prevailing opinion. It is the doctrine sanctioned by governments, and maintained by the severest legal penalties. The question cannot, at this time, be satisfactorily decided: but recently strong evidence has been published in opposition to the doctrine of contagion, especially by Drs. Bowring and Laidlaw. Dr. Davy says—"I am undecided." But, independent of the question of the contagious nature of plague, other great and fundamental ones, on the supposition that it is propagated by a peculiar matter generated by the disease, remain open for discussion. 1st. The time that the disease, subsequent to infection, can lie dormant in the system; and 2dly. The description of substances to which the matter of contagion can adhere, and by contact with which the disease can be communicated.

As regards the former question, its solution is probably involved in as much difficulty as the problem of the contagious nature of the disease itself; and concerning the second question, the susceptibility and non-susceptibility of certain substances to become the medium for conveying contagion, Dr. Davy thinks that the classification is equally arbitrary and erroneous.

> "Cotton, wool, silk, flax, hemp, leather, are placed in the class of susceptible articles. Wood, metal, glass, are placed in the class of non-susceptible articles. Whilst you are detained in quarantine, you may deliver money to a person who comes to see you; you may drink out of the same glass; you may receive trays and baskets of provisions, and return them, with plates and glasses, without infraction of quarantine regulations—without bringing into quarantine the person into whose hands these articles have been placed. But should any one touch

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* "Observations on the Oriental Plague, and on Quarantine as a means of arresting its progress, addressed to the British Association of Science, assembled at Newcastle, in August 1838." By John Bowring.

> your glove or hat, or any part of your dress, or should you touch any part of his, he is immediately subject to quarantine of the same duration as yourself. Why such distinctions have been made, it is even difficult to conceive—they are so unscientific, so contrary to all the analogies of other contagious matters—and I may add, without exaggeration, so irrational. I have referred to authors for the grounds of the distinctions in vain; I have referred to living authorities, those conversant with plague and the quarantine regulations, equally in vain. I have been told by the latter, vaguely and generally, that common experience has proved that one class of articles are susceptible, and that those of the other class are not,—precise facts and data I have in vain asked for."—P. 338.

We cannot, of course, follow our author in his ingenious arguments, showing the groundless distinction of articles into susceptible and non-susceptible; but, independent of this objection, he asks,

> "Can lazarettoes be considered secure, and capable of insulating contagion, when, though surrounded by walls, they are open to the atmosphere, and more or less exposed to the winds? There is nothing to prevent light substances, as fibres of cotton, bits of paper, or feathers, from being blown from the enclosure of a lazaretto into the adjoining country or town."—P. 343.

As contraband trade will continue despite the greatest vigilance and the severest penalties, the whole system of quarantine may, from this cause alone, be vitiated, and all its regulations rendered nugatory. Other diseases decidedly infectious and contagious, as smallpox, measles, and scarlet fever, are not excluded by means of quarantine. Do these arise *de novo*, or how are they introduced?

Quarantine establishments are considered by Dr. Bowring, in his able pamphlet already referred to, as "for the most part instruments, and terrible instruments, of diplomacy and state policy." And Dr. Davy adds—"This, I believe, in too many instances, is unquestionably true." Indeed, the inconsistencies of quarantine, as at present conducted in the different States of Europe, are so numerous that it were easy to fill a volume with striking examples.

> "I have now gone over some of the grounds of objection to the quarantine system, as at present established. There would be no difficulty in stating others; as, I am confident, the more minutely the system is examined, the more faulty and objectionable it will be found to be, and fully warranting the conclusion of Dr. Bowring, already quoted, viz. 'that the regulations of quarantine are not only useless for the ends they profess to accomplish, but are absolutely pernicious, increasing the evils against which they are designed to guard, and adding to the miseries which it is their avowed object to modify or remove."—P. 350.

Dr. Davy agrees cordially with Dr. Bowring in the paramount importance of sending a commission into the Levant, in order thoroughly to investigate the whole question. They think, indeed, that the leading commercial powers of Europe, as the sanatory legislation of England alone could scarcely be changed, ought to cairy on a contemporaneous, if not a united, investigation; and thus the result, should the existing state of things not be justified, might lead to a revision of the laws of quarantine, friendly to all commercial relations, as well as to knowledge and human happiness.

Dr. Davy, in conclusion, adduces several examples, taking it for granted that the disease is contagious, illustrative of its slight degree of activity. The power possessed by merchandise and articles of dress, and furniture, &c., for retaining and conveying the contagion of plague, he believes to be very much over-estimated.

> "Could articles of dress," he says, "retain the contagion of plague long, Constantinople, and indeed every Eastern town, ought never to be free from plague, as every one, I fancy, must be convinced who has ever walked through the old clothes bazaar of the city just mentioned, and witnessed the enormous quantities of articles of dress accumulated there, of all descriptions and conditions, and with the least possible attention to cleanliness, as the Turkish name of the quarter indicates."—P. 362.

Our author refers to an able report of Dr. Robertson, deputy inspector-general of hospitals, in which are brought forward many remarkable instances of escape from plague after communication with the infected. Here is one in the words of Dr. Robertson:

> "The Mohammedan inhabitants, impatient of guardians being placed over the houses in which there were cases of plague, and also indignant that the bodies of the dead were taken into the lazaretto, to be buried with lime, assembled one day in great numbers, seized a body which was being conveyed to the lazaretto; and, to show their contempt for all sanatory regulations, embraced the dead body, and rubbed themselves with the coverings of it. The mob also dispersed all the guardians that were over the infected houses, and from that day (the 17th of May,) there was no longer even the semblance of quarantine in Beirout. I never heard, (Dr. Robertson adds, writing on the 26th July, when the plague was on the decline all over Syria,) that any of the persons concerned in this affair suffered in their health."—P. 358.

Dr. Davy, in fine, arrives at the following conclusion:

> "Considerations arising out of the probable slight activity of the contagion of plague; the short time, it is probable, that it remains latent in the living system; the little aptitude that articles of merchandise, dress, and furniture seems to have to preserve the matter of contagion, are all in favour, I cannot but think, of the necessity of a revision of the laws of quarantine, with a fair prospect, as I have already observed, of their being greatly mitigated, and at the same time rendered efficient, to the great comfort of the traveller, the incalculable advantage of commerce, and the universal benefit of mankind."—P. 362.

We have entered more fully upon this subject, in consideration of the applicability of these observations as regards the yellow fever of our own country. We have already remarked that the great mass of the profession now look upon yellow fever as a disease *sui generis*, and not identical with remittent fever,—having an endemic origin, and being never contagious under the ordinary circumstances of cleanliness and ventilation. We may add that, at New Orleans, this fact is exemplified by nearly every year's experience. As this city occupies a position upon a mighty river's bank, formed of the alluvion of its own current, the local causes, notwithstanding it may be regarded as a healthy locality during nine months of the year, favour the development of this disease; and we find accordingly that as the summer temperature increases, yellow fever appears almost with the certainty of the varying seasons, and disappears as regularly when the scale of the thermometer indicates its decrease. At the former period, vessels laden with fugitives from pestilence ascend the stream by hundreds; but, notwithstanding the fatal *black vomit* appears on the decks as they pass along, the disease is never manifested among fellow passengers from *uninfected* regions; nor is it, under like circumstances, communicated to the inhabitants of the district to which they may fly. Are we not logically warranted then in the inference that it is a disease purely of season and locality?

The chapter on smallpox is a most valuable contribution to the statistics of this disease.

> "From its first outbreak in March, 1830," says Dr. D., to its cessation in August, 1831, 8067 persons were attacked in Malta; and from its first appearance to its cessation, in the adjoining island of Gozo, between April of one year and May of the following, 2284 were attacked; of whom 1172 died in Malta, and 351 in Gozo, (making a total mortality of 1523 for the two islands,) which is the ratio of 1 in 6.8 of the number attacked in the former, and of 1 in 6.2 in the latter."—P. 370.

We shall notice merely the most important results of these statistics, furnished by the returns of the Lieutenant-Governor.

> "The influence of age," says Dr. D., "is strongly marked in the numbers attacked, and how (taking the numbers as a criterion) the tendency to the disease diminishes with advancing age; and, what is very remarkable, how, after 28, almost a complete exemption appears to have been afforded. I regret that I cannot give the numbers attacked of different ages, from one year upwards; farther on, a return of deaths on this plan will be furnished, from which it may be inferred as probable that the diminution of tendency to contract the disease, at least after a certain period of life, is not in the exact ratio of augmentation of age.
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> "It is hardly necessary to point out that the strong disposition to infection in infancy, especially in the first year, is deserving of being impressed on the minds of parents; it may be brought forward as a powerful argument for early vaccination."—P. 379.

The influence of age on the mortality, especially of tender age, is, as might be anticipated, well marked.

> "Whilst the general mortality, including all ages, has been 1 in 6.8 of those attacked, in infancy it has been in the proportion of 1 in 3.7; in the next period, viz. between 8 and 14 years, as 1 in 15.2; in the next, between 15 and 28, as 1 in 11.2; and in the last, those above 28 years of age, as 1 in 9.7."—P. 382.
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> From another table, under the head of vaccination, "it appears that the mortality amongst those not vaccinated was 1 in 4.7; amongst those supposed to have been vaccinated, 1 in 23.4; amongst the well vaccinated, 1 in 15.6; and lastly, amongst those attacked a second time by smallpox, 1 in 10.8.
>
> "Why the proportion amongst the well vaccinated should be greater than amongst those supposed to have been vaccinated, I am not able to explain. Perhaps the apparent anomaly may be connected with the circumstance, that the majority of the former may have belonged to the infantile age.
>
> "As regards the general effect of vaccination, in its influence both as affording protection from smallpox to a considerable extent, and mitigating its severity when not preventing the attack, the facts given are clear and satisfactory. It is a curious circumstance, that the proportion of those who died after a second attack of smallpox, was, as has been already pointed out, greater than in the instances of those who had the disease after vaccination."—P. 384.

A still stronger confirmation, however, of the beneficial effect of vaccination, was afforded by the comparative exemption of the British troops serving in Malta.

> "The native population, in 1830, was estimated at 100,839 persons; amongst whom it appears, from preceding returns, 1 in every 12.1 was attacked with the disease, and 1 in every 85 died; but amongst the military, including their wives and children, the proportion attacked, as shown above, was 1 in 188, and the mortality was only 1 in 682."—P. 385.

As no precautions whatever were taken to prevent intercourse between the military and inhabitants, there being indeed continual communication between the families of each, the protecting and mitigating power of vaccination is the more remarkably demonstrated.

> "Reasoning from the facts contained in the preceding returns, the influence of vaccination in preventing smallpox, appears to have been less than that of smallpox itself in preventing a second attack,—whilst the mitigating power of the former, compared with that of the latter, seems to have been greater: thus, of those attacked by smallpox, after having been vaccinated, as it was supposed, the mortality was only 4.2 per cent.; but amongst those who had the disease a second time, the mortality was as high as 9.3 per cent., a result which, I believe, is in accordance with common experience, if I may so express myself respecting an event, (a second attack of smallpox,) which is held to be a rare occurrence. The recurrence of the disease shows a peculiar susceptibility to it,—and on this ground, the severity of its effects have been attempted to be explained. But in such matters, I fear it must be confessed that explanation commonly is unsatisfactory, and that our knowledge is limited by the facts. An instance has been related to me of a lady, the mother of ten children, who had smallpox eleven different times; first in infancy, and subsequently on the occasion of each of her children having it, and, what is very remarkable, the latter attacks of the disease were not less severe than the first; no mitigating influence appeared to have been imparted to the constitution even by frequent repetitions of the specific morbid action peculiar to variola. This information I received from one of the sons of the lady,—an accurate observer himself, and a man of unquestionable veracity."—P. 386.

In this endemic, as in every other, some peculiarities were observed. A hemorrhagic tendency, as bleeding of the gums, bloody stools, and petechiæ, was prevalent in the worst cases, especially in the summer months. In these cases, death generally took place before the eighth day; and as it sometimes occurred without any other eruption appearing than the petechial, the disease might have been regarded as petechial fever.

There still remain two chapters of this highly interesting and instructive work, each of which pertains in some degree to medical science; but, in consideration of the space already devoted to these volumes, we feel obliged to be exceedingly brief. These chapters are entitled—"On the climate of Constantinople, and on some of the habits of the people in connection with climate and health," and—"Notice of some of the public institutions in Constantinople, in connection with the present state of Turkey."

> "Lying nearly in the same latitude as Naples, situated on the shore of the sea of Marmora and the banks of the Bosphorus, at no considerable distance from the Mediterranean, and close to the Black Sea, it might be expected," says Dr. Davy, "that the climate of Constantinople would differ but little from that of southern Italy; that it would be characterized by hot summers and mild winters; and would be distinguished by equability of temperature. Such, however, is only very partially the case. Its summer season is commonly hot, but its winters are often irregularly severe and protracted."—P. 393.

The remark that the climate of Constantinople might be expected to differ but little from that of southern Italy, coming as it does, from as distinguished a philosophic traveller as Dr. Davy, surprises us not a little. As Europe is separated from the polar circle by an ocean, and is intersected by seas which temper the climate, moderating alike the excess of heat and cold, whilst Africa, like an immense furnace, distributes its heat towards the same region, its climate must surely be more mild and uniform than that of Constantinople, which has on its east and north an immense continent, both elevated and extending towards the poles,—causes which produce the extremes of atmospheric temperature

> "The circumstances most peculiar in the character of its climate (Constantinople)," says Dr. D., "are, irregularity—variability, the sudden changes of temperature, with changes of wind and weather to which it is liable, and the

wide range of the thermometer. * * A fall of snow is not considered remarkable in April; a shower of snow has suddenly masked the bright verdure of the early May; even in summer, the most equable season, the range of the thermometer is considerable, and the fluctuations of temperature are often great. In July last, it was often so low as 70° before sunrise, and as high as 90°, or above that, in the afternoon in the shade."—P. 395.

Whilst the variation of temperature of the Mediterranean, through the greater part of the year, very seldom exhibits a greater range than from 55° to 82°, at Constantinople, during two years' observations, the range extended from 24° to 91°. Such, however, was the climatic character of this region in the days of Ovid, who, lamenting in pathetic strains his banishment, takes notice of the freezing of the Euxine and of the congelation of wine in its vicinity:

> Ipse vides certe glacie concrescere Pontum;
> Ipse vides rigido stantia vina gelu.—*Ex Ponto, lib. iv. Epist.* 7.

As regards insanity among the Turks, Dr. Davy says that there exists very little tendency. Constantinople has only two receptacles for lunatics —one for each sex; in both of these, he did not see more than forty inmates. We refer to this subject more particularly in order to show their wretched condition,—a state to which the lunatics of Christendom were exposed but a few years ago, before benevolence and humanity usurped the place of bolts and bars and stripes.

"The miserable state in which these wretched lunatics are kept," says Dr. D., "calls for severe reprehension;—it is disgraceful to the Turkish government —an opprobrium on Turkish humanity. In cold cells, in the winter season, (there was snow on the ground when I saw them,) with barred unglazed windows, the poor men are chained by the neck to the wall by a heavy iron chain, about six feet in length,—a space to which their exercise is limited. No medical aid is afforded them. They are open to the public gaze, and subject to irritation of an aggravated kind from mischievous boys and lads, who, as I witnessed, seemed to take a pleasure in tormenting them, making, even by blows, the violent doubly furious. In consistency with their treatment, the insane establishment is contiguous to a menagerie; one has to pass through the yard containing the cages in which a few wild beasts are exhibited, to enter that in which are the cells of the lunatics; and the payment for both is the same."— P. 421.

But in justice to the Turks, we will here mention that Dr. Davy admits their bedding and hospital dresses to be "of much better description" than in the British military hospitals. Their beds were raised from the ground, and the bedding consisted of mattresses, pillows, sheets, and a coverlet. This, by the way, was the only thing commendable connected with the Turkish military hospitals; and we state it here merely that it may serve the purpose of introducing the following set-off to the treatment of the lunatics:

"Even itch-patients," says our author, "had the comfort of beds of this description—a treatment singularly contrasted with that in use in the British military hospitals, the itch-ward of which is an abomination, (the men in it lying on boards, naked, excepting the covering of a single blanket,) worthy only of the hold of a slaver."——P. 430. S. F.